A brief review on carbon selective membranes from polymer blends for gas separation performance

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ABSTRACT

The development of carbon membranes for the separation of various gases has gained interest among researchers due to their superior performance in gas separation. The preparation of carbon membranes by blending materials has many advantages including time and cost effectiveness for tuning the properties of the membranes. Here we review the recent research progress that has been made in the context of breakthroughs and challenges in the development of carbon membrane materials. In addition, we provide information regarding carbon membrane fabrication in terms of the selection of precursors and additives, carbon membrane process conditions, and coating conditions that influence the performance of gas separation of the resulting carbon membranes. The perspectives and future research directions for carbon membranes are also presented.

KEYWORDS:

Carbon membranes; carbonization; coating; gas separation; precursors.

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